Including urgency in global warming assessment in LCA

Jørgensen, Susanne Vedel; Hauschild, Michael Zwicky; Nielsen, Per Henning ; Kløverpris, Jesper Hedal

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DTU Management Engineering
Department of Management Engineering
Division for Quantitative Sustainability Assessment

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Including urgency in global warming assessment in LCA

Susanne V. Jørgensen[1,2], Michael Z. Hauschild[1] Per Henning Nielsen[2], Jesper Hedal Kløverpris[2]

[1] Department of Management Engineering, Technical University of Denmark (DTU), Lyngby, Denmark

[2] Novozymes A/S

AIMS

•Address the issue of climatic tipping points, when assessing global warming in life cycle assessment (LCA)

•Address the value of temporary carbon storage in terms of climate change mitigation

➢Introduce additional impact category; a 'climatic tipping potential' (CTP)

Relevance of new suggested impact category

•Addressing climate change is urgent

➢Temperatures approach critical levels

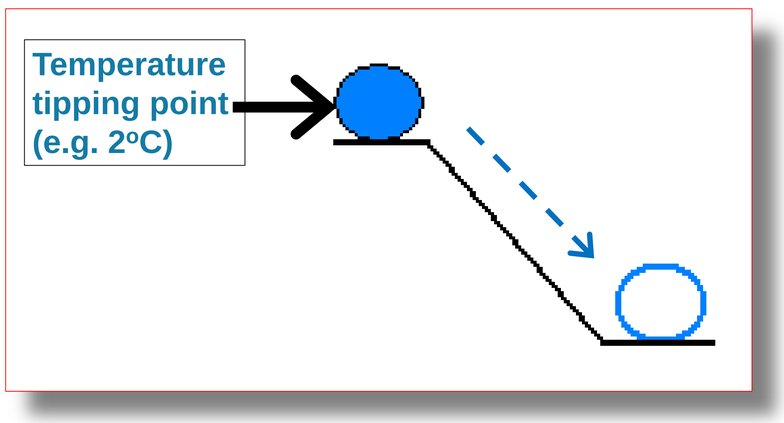
➢ Global warming potential (GWP) does not consider climatic tipping points and urgency of staying below such

•Crossing climatic tipping points may:

➢ Lead to dramatic climate change

➢ Be irreversible

(IPCC, 2007)



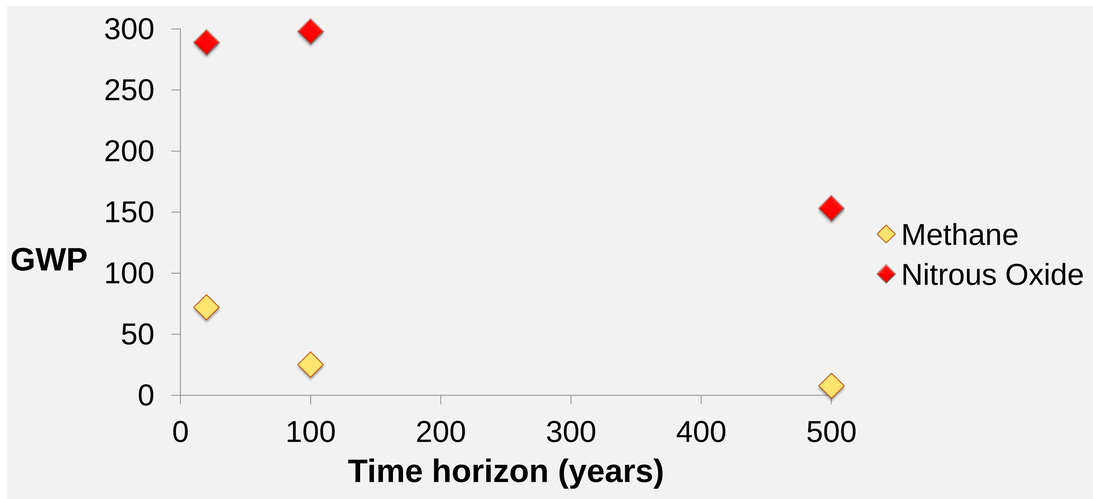
•For urgency of not crossing tipping points temporary carbon storage may be of relevance

•This can be expressed through the CTP impact category

•Alternatives to the GWP have been suggested, but do not cover both long term and urgency aspects of climate change

•Relative impact of GHGs varies with time horizon

➢Not included in GWP – will be included in CTP

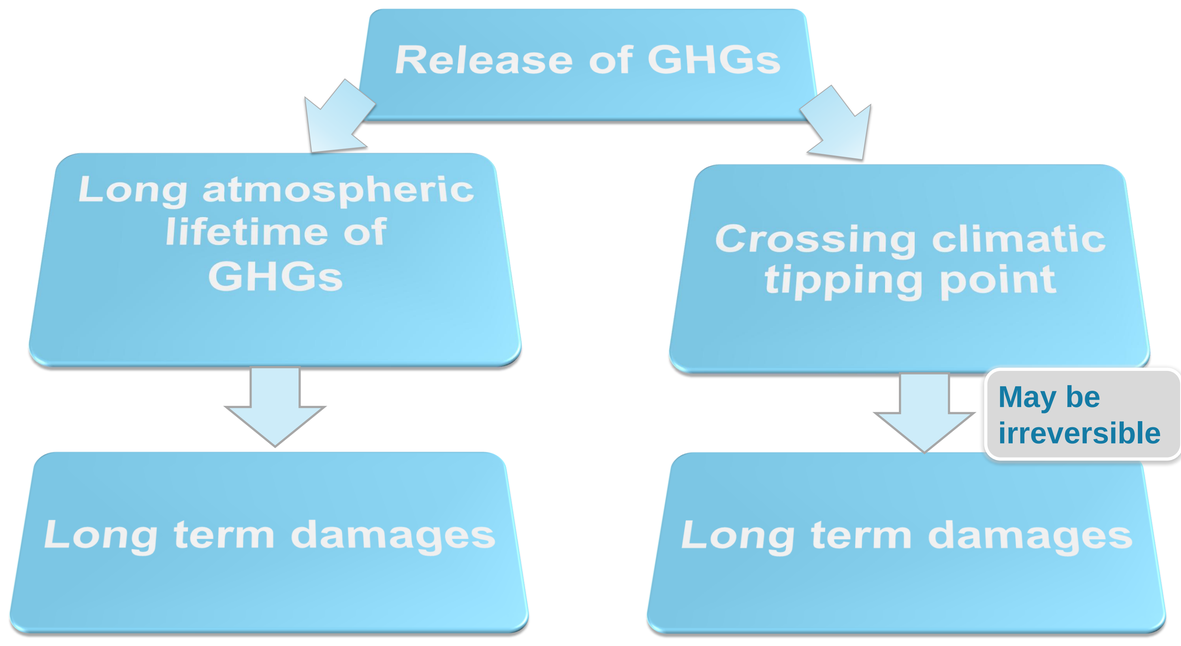


Impact of selected GHGs relative to CO_2 depending on time horizon
(data for GWP for 20, 100 and 500 years from IPCC (2007))

•Addressing both long term and urgency issues are essential:

➢They represent different aspects of the climate change challenge

➢Both lead to long term damage, but in different ways



EXPECTED RESULTS

•Enabling:

•Assessment of GHGs impacts on crossing climatic tipping points

•Without 'hiding' long term climatic impacts of long-lived GHGs

• Assessment of climate change mitigation value of temporary carbon storage

References:

IPCC (2007) *Climate Change 2007 - The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change;* Cambridge University Press: Cambridge, U.K. and NY, USA, **2007.**

For further information, please contact Susanne Vedel Jørgensen (at: suvjo@man.dtu.dk, or svjg@novozymes.com)